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**REMARKS**

Claims 1 through 6, 8 through 10 and new Claims 16 through 21 are pending in the application.

Claim 1 has been amended to clarify that the products of the invention advantageously include at least one probiotic. Support for this amendment can be found in the Application as filed, for example on Page 1, lines 5 through 8.

Claim 1 has also been amended to reflect that the products of the invention advantageously include at least 90 % by weight sorbic acid. Support for this amendment can be found in the Application-as-filed, for example in Claim 2. Accordingly, Claim 2 has been canceled, as its subject matter has been incorporated into Claim 1.

Claim 3 has been amended to address antecedent basis issues.

Claims 4 and 6 have been amended to provide a more conventional Markush format.

Claim 5 has been amended to clarify that the products of the invention advantageously comprise at least one enzyme. Support for this amendment can be found in the Application as filed, for example on Page 8, line 15 through Page 9, line 25.

Claim 9 has been amended to provide a more conventional preamble format.

Claim 10 has been amended to provide a specific lower endpoint of 0.5 % by weight. Support for this amendment can be found in the Application as filed, for example on Page 6, lines 11 through 13.

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Claim 10 has also been amended to clarify the product weight basis. Support for this amendment can be found in the Application as filed, for example on Page 6, lines 8 through 13.

Claims 7 and 11 through 15 were canceled in Applicant's Amendment of July 22, 2004 in response to the Restriction Requirement of June 29, 2004, without prejudice to the filing of continuing applications thereon.

Claims 16 through 21 have been added to complete the record for examination and highlight particularly advantageous embodiments of the invention.

Claim 16 reflects advantageous products comprising sorbic acid and at least one probiotic, in which the sorbic acid and probiotic are present in a weight ratio of 15: 1 to 99:1. Support for Claim 16 can be found in the Application as filed, for example on Page 10, line 29 through Page 11, line 20.

Claim 17 reflects advantageous embodiments comprising carboxylic acid consisting essentially of sorbic acid. Support for Claim 17 can also be found in the Application as filed, for example on Page 10, line 29 through Page 11, line 20.

Claim 18 is directed to advantageous aspects that do not include a neutralizing agent. Support for Claim 18 can be found in the Application as filed, for example on Page 10, line 29 through Page 11, line 34.

Claim 19 reflects advantageous embodiments incorporating acid resistant probiotic(s). Support for Claim 19 can be found in the Application as filed, for example on Page 4, lines 27 through 32.

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Claim 20 is directed to particularly advantageous probiotics that may be incorporated into the products of the invention. Support for Claim 20 can be found in the Application as filed, for example on Page 5, line 5 through Page 6, line 5.

Claim 21 is directed to advantageous feedstuffs that further include an amino acid composition comprising L-lysine HCl, DL-methionine and L-threonine. Support for Claim 21 can be found in the Application as filed, for example on Page 10, line 29 through Page 11, line 34.

Reexamination and reconsideration of this application, withdrawal of all rejections, and formal notification of the allowability of the pending claims are earnestly solicited in light of the remarks which follow.

*Submission of Terminal Disclaimer*

Claims 1 through 4 and 8 through 10 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting in light of commonly assigned United States Patent No. 6,780,447. Solely to advance prosecution of the case and without addressing the merits of the rejection, Applicant respectfully submits herewith a terminal disclaimer, as suggested by the Examiner. More particularly, Applicant submits herewith a terminal disclaimer to be charged to Deposit Account 50-2193 that disclaims the terminal part of any patent granted on the above-identified application extending beyond the expiration date of the full statutory term which may ultimately result from the cited patent, i.e. United States Patent No. 6,780,447.

Accordingly, Applicant respectfully submits that the foregoing double patenting rejection has been obviated upon entry of the enclosed terminal disclaimer.

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Section 112, Second Paragraph Rejection

Claims 1 through 6 and 8 through 10 stand rejected under 35 USC § 112, second paragraph.

Claims 1 through 6 and 8 through 10 stand rejected over the term "probiotic activity (=probiotic)." Claim 1 has been amended to remove the phrase "activity (=probiotic)." Claim 1 has further been amended to remove the term "culture of a microorganism with." The claims as amended thus more clearly reflect that the recited products include at least one probiotic. As noted above, support for this amendment can be found in the Application as filed. Applicant accordingly respectfully requests withdrawal of this rejection.

Claim 3 stands rejected due to a lack of antecedent basis regarding the feedstuff recitation. Claim 3 has been amended to provide proper antecedent basis. Applicant accordingly respectfully requests withdrawal of this rejection.

Claims 4 and 6 stand rejected due to improper Markush language. Claims 4 and 6 have been amended to recite a more conventional Markush format. Applicant accordingly respectfully requests withdrawal of this rejection.

Claim 5 stands rejected over the recitation "enzyme product." Applicant respectfully submits that one skilled in the art would readily be apprised of the metes and bounds of the invention defined within Claim 5. However, without further addressing the merits of the rejection and solely to advance prosecution of the case, Claim 5 has been amended to remove the noted phrase. Applicant accordingly respectfully requests withdrawal of this rejection.

Claim 9 stands rejected over the recitation "addition." The preamble of Claim 9 has been amended to more clearly reflect that a feedstuff additive is intended. Applicant accordingly respectfully requests withdrawal of this rejection.

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Claim 10 stands rejected over the recitation of "> 0.0 ... % ." Applicant similarly respectfully submits that one skilled in the art would likewise readily be apprised of the metes and bounds of the invention defined within Claim 10. However, without further addressing the merits of the rejection and solely to advance prosecution of the case, Claim 10 has been amended to recite a lower weight limit of 0.5 % by weight. As noted above, support for this amendment can be found in the Application as filed. Applicant accordingly respectfully requests withdrawal of this rejection.

Claim 10 stands further rejected over the recitation "by weight (based on the feedstuff)." Claim 10 has been amended to clarify the product weight basis. As noted above, support for this amendment can be found in the Application as filed. Applicant accordingly respectfully requests withdrawal of this rejection, as well.

Based on the foregoing amendments, Applicant respectfully submits that the claims as amended are in conformance with 35 USC § 112.

*The Claimed Invention is Patentable  
in Light of the Remaining Art of Record*

Claims 1 through 6 and 8 through 10 stand rejected as either anticipated by or obvious in light of United States Patent No. 6,183,794 ("US 794") to Kaesler et al, either alone or in view of United States Patent No. 6,461,607 ("US 607") to Farmer.

It may be useful to consider the invention as recited in the claims before addressing the merits of the rejection. The products of the invention include sorbic acid and at least one probiotic. Advantageously, the products of the invention comprise at least 90 % by weight sorbic acid, as recited in the claims as amended.

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In particularly beneficial aspects of the invention, the sorbic acid and probiotic are present in a weight ratio of 15:1 to 99:1, as recited in Claim 16. In further advantageous embodiments, the products of the invention include carboxylic acid consisting essentially of sorbic acid, as recited in Claim 17.

The products of the invention may beneficially be incorporated into feedstuffs, as reflected in Claims 9 and 10. In particularly advantageous embodiments, feedstuffs in accordance with the invention may further include an amino acid composition comprising L-lysine HCl, DL-methionine and L-threonine, as recited in Claim 21.

The primary reference does not teach or suggest the claimed invention.

US 794 is directed to propionic acid-based compositions that are less corrosive and malodorous than propionic acid alone. (Col. 1, lines 7 – 10 and lines 17 – 19). The impetus of US 794 is thus the partial neutralization of propionic acid with ammonia and further inclusion of a relatively small amount of propanediol. (Col. 4, lines 8 – 11 and Col. 2, line 23). US 794 discloses compositions consisting essentially of at least 78% propionic acid, along with up to 5% ammonia and up to 6% propanediol. (Col. 2, lines 18 – 51). US 794 broadly notes that its compositions may contain additional C<sub>1</sub> to C<sub>8</sub> carboxylic acids. (Col. 3, lines 1 – 3). US 794 then goes on to provide a laundry list of suitable additional carboxylic acids, culminating in the preferred incorporation of formic or acetic acid. (Col. 3, lines 3 – 10). US 794 further provides a similarly generic laundry list of additional “auxiliaries” that may be included in its solutions. (Col. 3, lines 56 – 59).

Accordingly, US 794, whose compositions include at least 78 % propionic acid, does not teach or suggest the recited products comprising at least 90 % by weight sorbic acid. US 794 likewise does not teach or suggest products incorporating sorbic acid and probiotic in a weight ratio of from 15:1 to 99:1, as recited in Claim 16. US 794 instead strongly teaches away from such products.



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US 794 similarly does not teach or suggest the recited products comprising carboxylic acid consisting essentially of sorbic acid, as recited in Claim 17. US 794 likewise teaches away from such embodiments by requiring propionic acid.

US 794, whose compositions further require an ammonia neutralizer, similarly teaches away from products that do not include a neutralizing agent, as recited in Claim 18.

US 794, generically noting the optional incorporation of "auxiliaries," also does not teach or suggest the acid resistant probiotic(s) of Claim 19 or the particular probiotic(s) of Claim 20. Nor does US 794 teach or suggest the advantageous feedstuffs incorporating an amino acid composition comprising L-lysine HCl, DL-methionine and L-threonine recited in Claim 21.

Accordingly, Applicant respectfully submits that US 794 does not teach or suggest the products recited within Claims 1 through 6, 8 through 10 and 16 through 21.

Applicant further respectfully submits that US 607 does not cure the deficiencies within US 794.

US 607 is directed to antimicrobial-resistant bacteria, in particular to antimicrobial-resistant strains of *Bacillus coagulans*. (Col. 5, lines 33 – 36 and Col. 1, lines 10 - 15). Antibiotics, which are anti-microbial by nature, often kill beneficial flora along with pathogenic microorganisms. (Col. 3, line 62 – Col. 4, line 3). The primary impetus of US 607 is the co-administration of antimicrobial-resistant bacteria and antibiotics to re-establish beneficial flora eliminated by the antibiotic. (Col. 5, lines 33 – 40). US 607 further notes that its bacteria prevents and/or reduces the rate of colonization of infections. (Col. 7, line 64 – Col. 8, line 4). For animal treatment, US 607 recommends its bacteria be combined with diatomaceous earth and/or bifidogenic oligosaccharide. (Col. 32, line 49 – Col. 33, line 6 and Col. 35, lines 14 – 18). US 607 also provides an extensive list of agents which may be incorporated into its compositions, including antioxidants, vitamins and the like. (Col. 23, line 66 – Col. 24, line 23).

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Although generally directed to bacteria, US 607 does not teach or suggest their combination with acids. Consequently, US 607 most certainly does not teach or suggest the recited products comprising at least 90 % by weight sorbic acid. Nor does US 607 teach or suggest products incorporating sorbic acid and probiotic in a weight ratio of from 15:1 to 99:1, as recited in Claim 16, or products comprising carboxylic acid consisting essentially of sorbic acid, as recited in Claim 17.

As US 607 is silent as to acids, it further does not teach or suggest the acid resistant probiotic(s) of Claim 19.

Nor does US 607 teach or suggest the advantageous probiotics of Claim 20. US 607, directed to particular antimicrobial-resistant bacteria strains, instead teaches away from the probiotics of Claim 20.

US 607 further does not teach or suggest the advantageous feedstuffs incorporating an amino acid composition comprising L-lysine HCl, DL-methionine and L-threonine recited in Claim 21.

Accordingly, Applicant respectfully submits that US 607 likewise does not teach or suggest the products and/or feedstuffs recited within Claims 1 through 6, 8 through 10 and 16 through 21.

There would have been no motivation to have combined US 794 and US 607. Applicants respectfully submit that merely because the references can be combined is not enough, there must still be a suggestion. MPEP 2143.01 (section citing Mills). US 794 seeks to improve the corrosive properties and odor of propionic acid compositions. US 607 attempts to reestablish beneficial flora eliminated by conventional antibiotics. These are altogether different issues; to say the least.



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However, even if combined (which Applicants submit should not be done), the claimed invention would not result. US 794 is directed to propionic-acid based compositions. US 607 merely discloses particular strains of anti-microbial resistant bacteria. Consequently, even if combined, the recited products comprising at least 90 % by weight sorbic acid would not have resulted.

Nor would the combination have resulted in products incorporating sorbic acid and probiotic in a weight ratio of from 15:1 to 99:1, as recited in Claim 16. Similarly, the combination would not result in products comprising carboxylic acid consisting essentially of sorbic acid, as recited in Claim 17.

The combination further does not teach or suggest products that do not include a neutralizing agent, as recited in Claim 18, or acid resistant probiotic(s), as recited in Claim 19. And the combination most certainly would not result in the particular probiotic(s) of Claim 20 or the amino acid composition of Claim 21.

Accordingly, Applicant respectfully submits that Claims 1 through 6, 8 through 10 and 16 through 21 are patentable in light of US 794 or US 607, considered either alone or in combination.

*Statement in Conformance with 37 CFR 3.73(b)*

As noted above, a Power of Attorney, appointing Cathy R. Moore as a Practitioner of Record for Nutrinova Nutrition Specialties & Food Ingredients, GmbH, is attached. The above-referenced application has been assigned in its entirety to Nutrinova Nutrition Specialties & Food Ingredients, GmbH at Reel/Frame 012758/0302. Copies of the assignment will be forwarded upon request. Accordingly, Cathy R. Moore is authorized to act on behalf of Nutrinova Nutrition Specialties & Food Ingredients, GmbH in the above-referenced application.

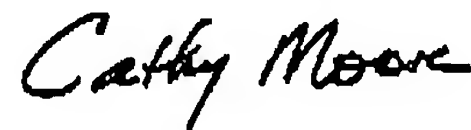
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### **CONCLUSION**

It is respectfully submitted that Applicant has made a significant and important contribution to the art, which is neither disclosed nor suggested in the art. It is believed that all of pending Claims 1 through 6, 8 through 10 and 16 through 21 are now in condition for immediate allowance. It is requested that the Examiner telephone the undersigned if any questions remain to expedite examination of this application.

It is not believed that extensions of time or fees are required, beyond those which may otherwise be provided for in documents accompanying this paper. However, in the event that additional extensions of time and/or fees are necessary to allow consideration of this paper, such extensions are hereby petitioned under 37 CFR § 1.136(a), and any fee required is hereby authorized to be charged to Deposit Account No. 50-2193.

Respectfully submitted,



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### **CERTIFICATE OF FACSIMILE TRANSMISSION**

I hereby certify that this correspondence is being facsimile transmitted to the United States Patent and Trademark Office at facsimile number (703) 872-9306 on January 24, 2005.



Claire Wygand